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FOREST SERVICE



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JACK-PINE BUDWORM EGG SURVEY ON THE
HURON NATIONAL FOREST - 1969

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INTRODUCTION

The last outbreak of jack-pine budworm, *Choristoneura pinus pinus* Free., began in 1963 on Mio Ranger District. Extensive defoliation on the Forest occurred until 1966, and in 1967 barely any defoliation was observed from the air. Since then, light to moderate defoliation has been observed in various areas. Annual population trend surveys are made to observe fluctuations in order to develop a method which can predict severe outbreaks before damage occurs.

METHODS

Fourteen plots are systematically scattered throughout the jack-pine type of the Forest. Each plot is a jack pine stand at least 5 acres in size. Each sample consists of 4, 36 inch long branches (2 from mid-crown and 2 from lower-crown) taken from each of 10 dominant/co-dominant trees located in a cluster. The number of tips (current shoots) and the number of egg-masses and the degree of their parasitization was determined by a crew at Toumey Nursery. The average number of eggs per 100 tips was calculated with the assumption that an average egg-mass has 50 eggs. The egg numbers of parasitized egg-masses were reduced in proportion to the parasitization. Populations of more than 50 eggs per 100 tips are considered capable of causing severe damage, provided all budworms survive until pupation.

RESULTS

Generally, it appears that the budworm population is declining (Table 1). Only two plots show population increase (405 and 406). In these areas severe defoliation is possible. However, in 5 plots the populations are 50 or more eggs per 100 tips. If all eggs develop into large larvae, severe defoliation could result. The downward population trend, and the usually expected mortality (50%) indicates that severe defoliation is likely only in the area where plots 405 and 406 are located.



Table 1. Results of 1969 egg survey and population trends since 1967.

Plot No.	Location			Number of eggs per 100 tips		
	T	R	S	1967 ^{1/}	1968	1969
401	25	2W	9	--	11	3
402	25	4W	21	34	5	1
403	25	1W	23	--	124	9
405	26	1E	23	--	34	131
407	25	2E	12	--	14	148
408	25	3E	12	54	50	71
410	26	4E	2	--	74	---
411	26	6E	31	--	94	47
412	24	5E	15	--	37	14
413	24	7E	3	--	294	53
414	23	6E	23	--	15	34
415	23	7E	22	--	66	26
416	23	8E	1	--	95	12
420	25	7E	15	74	50	71

^{1/} Data provided by Dr. F. B. Knight, School of Natural Resources, University of Michigan.